

Overview: In this lab you will be creating sequence diagrams for the transit application project. Note that this is an individual lab, but you will be getting feedback from peers that you are expected to incorporate into your diagram.

Learning Outcomes:

- Create a high-level UML class diagram
- Create sequence diagrams
- Use Enterprise Architect to create sequence diagrams

Instructions:

Using the transit project description and your use cases, you should break down the workflows for the specified scenarios below into high-level substeps. Using text analysis, identify the potential objects (nouns) and actions between the objects (methods). Translate both of these scenarios into a **on-paper** sketches of a mid-level UML class diagram and mid-level UML sequence diagrams. You should have two sequence diagrams:

- A transit manager imports valid files into the application and searches for a specific stop (by stop id) to find the next trip arriving at that stop.
- A route planner imports valid files into the application and changes a time that an individual trip arrives and departs at a given stop. She then exports the files and uploads them to the Google Transit API to be displayed on Google Transit.

Write your name at the top of your page. Exchange one of your high level diagrams with at least one neighbor by taking a picture of it and sharing it in a private Teams message to get their feedback. The feedback must be given in a different color ink (You may want to use Microsoft Paint for this) and the person giving their feedback should sign their initials on the top of your paper and share it with both you and the instructor. **If your diagram doesn't have useful feedback that informs a change in your diagram, then find someone else for additional feedback.** After identifying required modifications in your diagram, please call over the instructor to get feedback on your diagram **and** planned modifications (you do not need to implement the changes on paper).

Next, think about where data structures would improve the efficiency of your operations. Update your sequence diagrams accordingly. You are welcome to give feedback to others on where data structures would improve their efficiency as well.

Next, you should take your class and sequence diagrams and implement them in Enterprise Architect. Details of how to create a sequence diagram in EA are available here:

http://www.sparxsystems.com.au/resources/demos/sequence/Sequence_diagram.htm

<https://www.youtube.com/watch?v=ehz3ha5Jp94>

https://emerald.msoe.edu/resources/development_tools:enterprise_architect:seq_diag

(The emerald link must be accessed from on campus or through [Global Protect](#))

It is important to note that EA requires that a “Class” Model is created before allowing the creation of a “Sequence Diagram.” After you have created the Class Model (use the default settings), right click on “Class Model” in the project browser directly under “Model” and select “Add Diagram.” The Sequence Diagram is a “UML Behavioral” diagram.

Deliverables: Pdfs of your EA sequence diagrams should be uploaded by the due date. Include your name, the course code (SE2030), the lab number and title, any date on which you worked on the lab within the PDF.

Lab Checkoff: You should show a draft of your (hand-drawn) first sequence diagram with peer feedback to the instructor **before** implementing it in EA.

Due Date: Start of class, First class of Week 3.

Grading:

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|-----------------------------|-------------|
| Hand-drawn diagram creation | 20% |
| Diagram Syntax | 30% |
| EA diagrams | 20% |
| Diagram Semantics | 20% |
| In class checkoff | 10% |
| TOTAL | 100% |